CLINICAL NOTES AND CASE REPORTS

THROMBO-ANGIITIS OBLITERANS IN A WOMAN*

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IT is generally conceded that the female sex is but rarely affected by thrombo-angiitis obliterans. Herrell and Allen[1] have recently described an acceptable instance and, in discussing the incidence of this disorder in women as seen at the Mayo Clinic, state that this has been the only case encountered among 350 patients with Buerger's disease admitted to the Clinic since 1932. Horton and Brown[1] had previously reviewed 700 cases seen at the Clinic up to that year, of which only ten occurred in women. Of a total of 1,050 patients with Buerger's disease, therefore, the incidence in women was 0.9 per cent. As Herrell and Allen indicate, of the total number of twenty cases reported in the literature up to this year, the diagnosis in some is open to doubt. Because of its exceeding rarity it is worth while to describe the following carefully studied instance of thrombo-angiitis obliterans occurring in a female.

REPORT OF CASE

A white, married housewife, forty years of age, was first seen on June 15, 1936, complaining of a painful ulcer of the foot.

Her health had been excellent up to the onset of the present disturbance, and no history of preceding infectious or metabolic diseases could be elicited. The familial background was good, none of the members having been affected by vascular disease. Her ancestors were of English and Scottish blood.

The patient had one normal pregnancy eighteen years ago. Menstruation has been normal.

The patient has never ingested rye bread, nor has she consumed ergot or any of its derivatives. She has, however, smoked twenty cigarettes daily for at least fifteen years.

One year ago the patient had applied lysol to her feet because of dermophytosis. The resultant burns had healed extremely slowly. Six months later a painful ulcer appeared on the right first toe. She remained in bed for several months because of pain in the foot on walking, and the lesion gradually healed.

Four months ago a similar ulcer appeared on the tip of the left great toe. It was extremely painful, particularly at night, and the patient was accustomed to flex the leg sharply and place her foot under the opposite thigh for relief. Walking became impossible because of pain. The toe nail was removed by a doctor because of supposed infection. The condition of the ulcer remained unchanged following this procedure; but the foot had become somewhat swollen, and the patient noticed bluish discoloration of the toes when the leg was dependent.

Three months ago the finger nail of the right fourth finger was removed because of an infection. The nail is growing in slowly, but the fingers of this hand are frequently noted to be a reddish blue when cold. She believes that the growth of the finger nails is not retarded.

The results of physical examination, aside from the vascular system, were not remarkable. Blood pressure was 130 millimeters systolic and 92 millimeters diastolic. Chemical and microscopic examination of the blood and urine were noninformative. The Kolmer and Kahn reactions of the blood were negative. Viscosity of the blood serum was not increased.

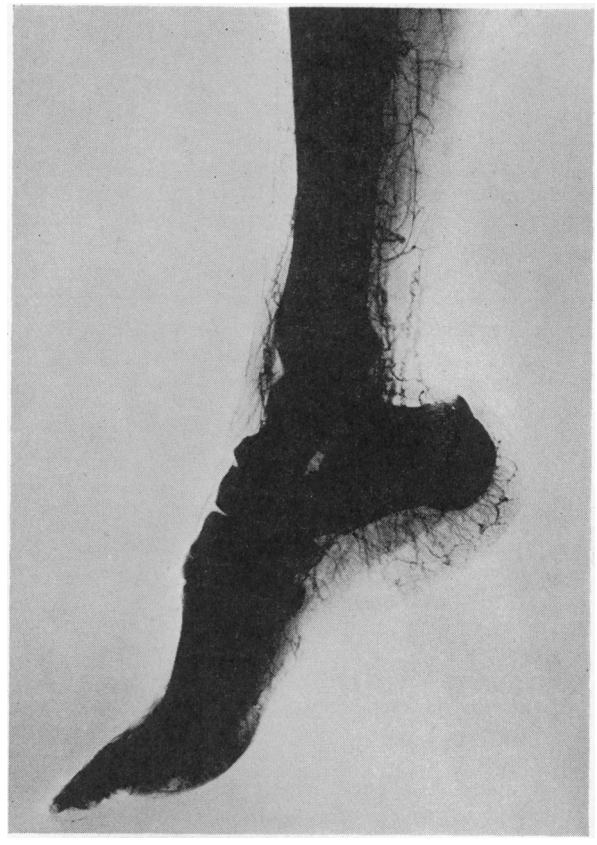

Fig. 1.—Arteriogram of the right lower leg and foot.

On examination of the extremities, the fingers of the right hand were found to be rather cold and pink-blue in color. The skin was flexible; there was no atrophy of the finger pads. A deformed nail was growing on the right fourth finger. The radial pulse was extremely feeble and no ulnar pulse was palpable. Pulses at the left wrist were strong. Brachial pulses were good. The oscillmetric index was 1.5 at each wrist. Reactive hyperemia of the warmed hand, following deflation of a blood-pressure cuff, was apparent in the right palm in seven seconds; in the third, fourth, and fifth fingers, in ten seconds; and in the first and second fingers, in sixteen seconds. In the left hand, hyperemia of the palm was apparent in five seconds; of the fourth and fifth fingers in seven seconds; of the first, second, and third fingers, in eight seconds. (Normal is two to three seconds.) As tested by Allen's method, the right ulnar artery was apparently occluded.

There was pronounced discoloration of both feet on dependency, and rapid blanching on elevation. The left first toe nail was absent and the nail-bed was covered with purulent exudate. There was slight swelling over the dorsum of the foot. At the base of the right first toe on on the medial aspect was a circular scar.

Good pulsations were felt over both femoral and popliteal arteries. Posterior tibial pulse of each foot was extremely faint. No pulse was felt in the dorsalis pedis arteries. The oscillometric indices were as follows:

	Left	Right
Above knee	3.5	3.5
Below knee	3.0	3.5
Ankle	1.0	0.75
Foot	0.0	0.0

Reactive hyperemia, or "flushing,"[2] appeared evenly in the toes of the right foot in twenty seconds; in those of the left, in twenty-five seconds. (Normal is four to six seconds.)

The patient was placed in a room maintained at a constant temperature of 18.2 degrees centigrade. Following the intravenous administration of typhoid vaccine, the temperature of the toes of the right foot rose from 19.6 to 28.6 degrees centigrade, failing to reach forehead tempera-

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ture by five degrees. Temperature of the toes of the left foot rose from 20.6 to 27.6 degrees centigrade. The temperature response following vasodilatation, resulting from procain block of the tibial nerves and application of heat to the trunk, gave substantially similar results.

An arteriogram (Fig. 1) of the right lower leg and foot shows absence of filling of the posterior tibial artery. The anterior tibial vessel is extremely narrowed and cannot be traced below the lower third of the leg. The fine cobweb-like collateral circulation is typical of that seen in thrombo-angiitis obliterans below the level of occlusion of the major trunks.

COMMENT

The clinical picture of widespread vascular disturbance affecting the four extremities is, in this patient, dependent both upon organic arterial occlusion and intense vascular spasm. There is no evidence of arteriosclerotic vascular disease, all accessible vessels being nontortuous and soft. Etiologic factors such as acute infection, syphilis, poisoning from ergot or ergotamin tartrate, may be excluded. The diagnosis of thrombo-angiitis obliterans seems assured. The further course of the malady is also substantial confirmatory evidence. Following a series of intravenous typhoid injections, and cessation of smoking, pain rapidly subsided and the ulcer has completely healed. The prolonged use of tobacco by this patient is fully in accord with present conceptions regarding its important rôle in this disease, and it is of interest that the patient reported by Herrell and Allen was, likewise, a confirmed smoker.

SUMMARY

The occurrence of widespread thrombo-angiitis obliterans in a white, nonsemitic female, forty years of age, is described. The results of a detailed study of the peripheral circulation which confirmed the diagnosis are given. This is the twenty-second instance of its kind to be reported.

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REFERENCES

1. Herrell, W. E., and Allen, E. V.: Thrombo-Angiitis Obliterans in Women, Am. Heart J., 12:109 (July), 1936.

2. Elliot, A. H., Evans, R. D., Stone, C. S., and Gray, P. A.: Evaluation of Methods for the Study of Peripheral Vascular Disturbances, Calif. and West. Med., 1936. (In press.)

PARALDEHYD

EFFECTS OF AN OVERDOSE ON A PATIENT IN LABOR

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PARALDEHYD is rapidly gaining in popularity as a sedative in a great variety of medical and surgical conditions; the toxicology of this drug should, therefore, be of general interest. The following case presented an opportunity to study the toxic effects of an overdose of the drug.

REPORT OF CASE

Mrs. I. P., a primipara, age nineteen, entered a local hospital in labor at term, on November 11, at 11:40 p. m. The course of her pregnancy was uneventful. Her pains began at 3 p. m.

The findings on general physical examination at the time of admission were negative. The presentation was right occiput transverse. The dilatation was three centimeters, with semi-effacement, and station + 1. The membranes were intact.

Morphin sulphate, grain one-fourth, was given at 12:30 a. m. on November 12.

The patient continued to have weak pains through the night, occurring ten to fifteen minutes apart and lasting twenty to thirty seconds. Rectal examination at 5:50 a. m. showed little change in the progress of labor. Morphin sulphate, grain one-fourth, was repeated at 6:20 a. m.

The pains increased in strength and frequency. Rectal examination at 10:40 a. m. showed an increase in the dilatation to five centimeters, with a slight increase in effacement.

Morphin sulphate, grain one-sixth (H), and paraldehyd ʒiv, with benzyl alcohol 1.5 cubic centimeter per rectum, were ordered to be given. ʒiv was given by mistake. The patient's weight was 120½ pounds.

The special nurse in attendance was unfamiliar with the action of paraldehyd, and failed to observe anything unusual in the condition of the patient until later in the afternoon. According to the nurse, the patient was soundly asleep at 11:05 a. m., ten minutes following the administration of the drug.

At 4:30 p. m. the nurse reported that the patient's temperature was 102 degrees and that her pulse was weak and rapid. At this time I found the patient in a state of absolute unconsciousness. The pupils were partly dilated; the right pupil was fixed, the left reacted very slightly and sluggishly. There was no movement of the eyeballs. The face was flushed, and the skin was warm and moist; there was no cyanosis. The tongue had fallen back against the pharynx, seriously obstructing respiration. The breathing, however, became deep and regular with a rate of 32, as soon as an airway was introduced. There was a strong odor of paraldehyd on the breath. The pulse was weak and irregular, its rate 180 to 190. The blood pressure was 80/0. The activity of the uterus was completely abolished. The fetal heart rate was too rapid to count. The extremities were completely relaxed. All deep and superficial reflexes were absent.

Adrenalin, ephedrin, caffein, and coramin were given in rapid succession. One thousand cubic centimeters of 10 per cent glucose solution was given intravenously at 5:50 p. m.

The blood pressure had risen to 100/60, but the pulse rate remained unchanged.

Twenty-two ounces of urine were obtained by catheterization at 6:50 p. m., the patient having previously been catheterized at 3:15 p. m. The specimen showed a faint trace of albumen, one or two red blood cells, and a few pus cells per high dry field.

Twelve cubic centimeters of digifolin was given in divided doses, beginning at 7:45 p. m., and the ephedrin caffein, and coramin were repeated, approximately at four-hour intervals. At 8:15 p. m., the temperature had risen to 102.8 degrees. The pulse and respiration were unchanged. The blood pressure continued to drop periodically to 85. At 9 p. m. the bladder emptied spontaneously during an attempted catheterization. At 11 p. m. strabismus and movements of the eyeballs was observed, together with a return of the normal pupillary reflex. There was also a slight return of general muscle tonus. The patellar and achilles reflexes were still absent. A well-sustained bilateral ankle clonus was now readily elicited.

One thousand cubic centimeters of 10 per cent glucose solution was repeated at 11:35 p. m. An occasional cough, slight voluntary movements, and weak uterine contractions began to appear at about 1:00 a. m. on November 13. At 2:30 a. m. there was an involuntary defecation.

The uterine contractions gradually increased in strength and frequency, and the patient became very restless. At 5 a. m. weak bearing-down efforts were noticed. One thousand cubic centimeters of 10 per cent glucose solution was again given at 6 a. m. The pulse rate gradually slowed, but the blood pressure remained unstable, with a strong tendency to drop below 90. At 7 a. m. the temperature was 100.8 degrees, pulse 126, and respiration 36.

Rectal examination at 8 a. m. showed dilatation complete, station + 3, rotation O. D. 90 degrees, F. H. T. 144.

The uterine contractions and bearing-down efforts continued to increase. At 9:10 a. m. the membranes ruptured spontaneously. Rectal examination at this time showed station + 3 with rotation of O. D. 45 degrees. The